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1. Isolated Apo-2DcR polypeptide having at least about 80% amino acid sequence identity with native sequence Apo-2DcR polypeptide comprising amino acid residues 1 to 259 of Fig. 1A (SEQ ID NO:1).

- 2. The Apo-2DcR polypeptide of claim 1 wherein said Apo-2DcR polypeptide has at least about 90% amino acid sequence identity.
- 3. The Apo-2DcR polypeptide of claim 2 wherein said Apo-2DcR polypeptide has at least about 95% amino acid sequence identity.
- 4. Isolated native sequence Apo-2DcR polypeptide comprising amino acid residues 1 to 259 of Fig. 1A (SEQ ID NO:1).
- 5. Isolated extracellular domain sequence of Apo-2DcR polypeptide comprising amino acid residues 1 to 161 of Fig. 1A (SEQ ID NO:1).
- 6. The extracellular domain sequence of claim 5 comprising amino acid residues 1 to 236 of Fig. 1A (SEQ ID NO:1).
- 7. Isolated native sequence Apo-2DcR polypeptide comprising amino acid residues -40 to 259 of Fig. 1B (SEQ ID NO:3).
- 8. A chimeric molecule comprising the Apo-2DcR polypeptide of claim 1 or the extracellular domain sequence of claim 5 fused to a heterologous amino acid sequence.
- 9. The chimeric molecule of claim 8 wherein said heterologous amino acid sequence is an epitope tag sequence.
- 10. The chimeric molecule of claim 8 wherein said heterologous amino acid sequence is an immunoglobulin sequence.
- 11. The chimeric molecule of claim 10 wherein said immunoglobulin sequence is an IqG.

- 12 An antibody which specifically binds to the Apo-2DcR polypeptide of claim 1 or the extracellular domain sequence of claim 5.
- 5 13. The antibody of claym 12 wherein said antibody is a monoclonal antibody.
 - 14. The antibody of claim 12 which is an agonist antibody.
- 10 15. Isolated nucleic acid encoding the Apo-2DcR polypeptide of claim 1 or the extracellular domain sequence of claim 5.
 - 16. The nucleic acid of claim 15 wherein said nucleic acid encodes hative sequence Apo-2DcR polypeptide comprising amino acid residues 1 to 259 of Fig. 1A (SEQ ID NO:1).
 - 17. The nucleic acid of claim 15 comprising nucleotides 193 to 969 of Fig. 1A (SEQ ID NO:2).
 - 18. A vector comprising the nucleic acid of claim 15.
 - The vector of claim 18 operably linked to control sequences recognized by a host cell transformed with the vector.
 - \ 20. A host cell comprising the vector of claim 18.
 - 21. A process of using a nucleic acid molecule encoding Apo-2DcR polypeptide to effect production of Apo-2DcR polypeptide comprising culturing the host cell of claim 20.
 - 22. A non-human, transgenic primal which contains cells that express nucleic acid encoding Apo-2DcR polypeptide.
 - 23. The animal of claim 22 Which is a mouse or rat.

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- 24. A non-human, knockout animal which contains cells having an altered gene encoding Apo-2DcR polypeptide.
- 25. The animal of claim 24 which is a mouse or rat.
- 26. An article of manufacture, comprising a container and a composition contained within said container, wherein the composition includes Apo-2pcR polypeptide or Apo-2DcR antibodies.
- 10 27. The article of manufacture of claim 26 further comprising instructions for using the Apo-2DcR polypeptide or Apo-2DcR antibodies in vivo or ex vivo.
 - 28. A method of modulating apoptosis in mammalian cells comprising exposing said cells to Apo-2DcR polypeptide.
 - 29. The method of claim 28 wherein said cells are exposed to Apo-2 ligand.

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